



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BOARD OF INTERFERENCES AND PATENT APPEALS

In re Application of:  
T.K. Hopper

Serial No.: 10/821,217

Filed: April 8, 2004

For: **THERMOCOUPLES AND  
RESISTANCE TEMPER-  
ATURE DETECTORS OIL  
WICKING SEAL FITTING**

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Atty. Docket No.: DRYA,002-03

Examiner: A. D. Gilman

Group Art Unit: 2833

COMMISSIONER OF PATENTS  
P. O. BOX 1450  
ALEXANDRIA, VA 22313-1450

01/04/2008 HLE333 00000026 10821217

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255.00 OP

**CERTIFICATE OF MAILING (37 C.F.R. 1.8(a))**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date indicated below with sufficient postage as first class mail in an envelope addressed to the Commissioner of Patent and Trademarks, P.O. Box 1450, Alexandria, VA 22313-1450.

Mark R. Wisner, Registration No. 30,603

Dec. 26, 2007

Date

**NOTICE OF APPEAL**

Sir:

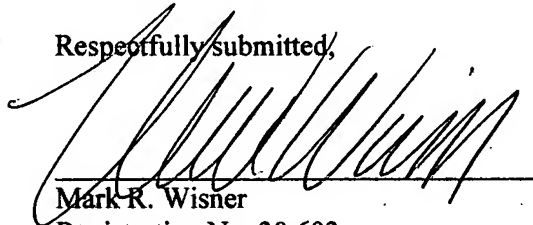
Applicant hereby appeals to the Board of Appeals from the decision dated June 27, 2007 rejecting claims 1-3 and 5-7.

The items checked below are appropriate:

1. ☒ Appeal fee (37 C.F.R. 1.17(e))
  - ☐ other than small entity [fee \$510.00]
  - ☒ small entity [fee \$255.00]
    - ☐ verified statement attached.
    - ☒ verified statement was filed.
2. ☒ A petition and fee for an extension of time for reply to the rejection (37 C.F.R. 1.17 (a)-(d)) is attached.
  - ☐ other than small entity
    - ☐ \$120 ☐ \$450 ☐ \$1030 ☐ \$1,590
  - ☒ small entity
    - ☐ verified statement attached
    - ☐ verified statement was filed
    - ☐ \$60 ☐ \$225 ☒ \$525 ☐ \$795

3. ☐ Check No. \_\_\_\_\_ is attached for the sum of \$ \_\_\_\_\_.
4. ☒ A credit card payment form (Form PTO-2038) authorizing a charge in the sum of \$780.00 (including the fee for a notice of appeal and the fee for the extension of time) is attached.
5. ☐ Please charge the fee(s) to the Deposit Account of Wisner & Associates, Account No. 50-0965 (\_\_\_\_\_).
6. ☒ In the event additional fees are required or if a check or Form PTO-2038 is inadvertently not enclosed, is unsigned or is insufficient in amount, or an extension of time is needed for this Notice to be considered timely, request is hereby made for same and the Commissioner is authorized to charge the Deposit Account of Wisner & Associates, Account No. 50-0965 (DRYA,002-03) in the amount of the applicable fee that may be required for entry of this paper. Any overpayment may be credited to Deposit Account No. 50-0965 (DRYA,002-03).

Respectfully submitted,



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Date: December 26, 2007

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1A is a perspective view of a permanently-implantable insert of the present invention;

FIG. 1B is a perspective view of a temporarily-implantable insert of the present invention;

FIG. 2 is a side sectional elevation view of the insert of FIG. 1A;

FIG. 3 is a front elevation view of the insert of FIG. 1A;

FIG. 4A is a rear elevation view of the insert of FIG. 1A;

FIG. 4B is a rear sectional elevation view of an insert similar to that of FIG. 1A, but instead having its opposite vertebral supporting surfaces disposed at an angle to one another.

FIG. 5 is a top plan view of the insert of FIG. 1;

FIG. 6 is a schematic sectional side elevation view of an implant having an electronic transducer therein;

FIG. 7 is a sectional side elevation view of a permanently-implantable insert with an electronic transducer therein;

FIG. 8 is a perspective view of the insert of FIG. 1 as connected to a positioning rod;

FIG. 9A is a top plan view of the insert of FIG. 1 as received in an oval shaped cannula;

FIG. 9B is an end view taken along line 9B—9B in FIG. 9A.

FIG. 10 is a top plan view of 2 cannulae accessing a patient's spinal region;

FIG. 11 is a perspective view of an insert as received between adjacent vertebrae;

FIG. 12 is a perspective view illustrating camming action as the insert of FIGS. 9A and 9B is rotated;

FIG. 13 shows the insert of FIG. 11 in a fully rotated position, buttressing against adjacent vertebrae; and

FIG. 14 is a top plan view of a pair of inserts positioned between adjacent vertebrae.

FIG. 15 is a kit comprising an intervertebral insert according to the present invention and instructions for its use.

FIG. 16 is an exploded perspective view corresponding to FIG. 14.

FIG. 17 is a perspective view of an oval coring device.

FIG. 18 is a side elevation view of another embodiment of the present insert.

FIG. 19 is a perspective view of the insert of FIG. 18.

FIG. 20 is a perspective view of the insert of FIG. 18.

FIG. 21 is an end elevation view of the insert of FIG. 18.

FIG. 22 is a perspective view of the insert of FIG. 18.

FIG. 23 is a sectional view taken along line 23—23 in FIG. 22.

FIGS. 24a, 24b and 24c are views corresponding to FIG. 23, but with but instead having its opposite vertebral supporting surfaces disposed at an angle to one another.

## DEFINITIONS

As used herein, the following terms are understood to have the following meanings:

"camming"—increasing intervertebral separation by rotating opposite convexly curved sides of an intervertebral insert against adjacent vertebrae.

"distraction"—pulling apart, separating, or increasing the distance between adjacent opposite vertebrae by physical or mechanical means.

"fusion"—complete ingrowth of bone tissue between adjacent vertebrae.

"outwardly facing convexly curved camming surface"—a surface having a degree of curvature corresponding to an arc section defined by an angle in the range of 15 to 40 degrees, and most preferably about 20 degrees.

"posterolateral"—behind and to one side.

"racetrack-shaped"—a shape having two elongated parallel sides and two curved ends.

## DESCRIPTION OF THE SPECIFIC

### EMBODIMENTS

The present invention comprises intervertebral inserts, methods and kits for separating and stabilizing adjacent vertebrae by camming apart the adjacent vertebrae with novel shaped intervertebral inserts having outwardly facing convexly curved camming surfaces disposed opposite one another. Both permanent and temporary intervertebral inserts are provided.

A first embodiment of a permanent intervertebral insert 20 is best seen in FIGS. 1A, 2, 3, 4A and 5. Insert 20 has a posterior end 24 and an anterior end 22. A longitudinally extending central rotational axis 26 extends between ends 22 and 24. To provide optimal intervertebral support, the length of insert 20 (i.e., the separation distance between ends 22 and 24) is in the range of 15 to 30 mm, and is most preferably about 25 mm.

A pair of outwardly facing convexly curved camming surfaces 28 and 30 are disposed on opposite sides of insert 20 at an angle to axis 26 as shown. Surfaces 28 and 30 are adapted to engage, and to separate by camming action, the opposed vertebral surfaces when insert 20 is placed between adjacent vertebrae and rotated into an anchored position, as will be described. In a preferred aspect, outwardly facing convexly curved camming surfaces 28 and 30 are selected to have a degree of curvature which facilitates camming with the degree of being neither too large (producing a more rounded insert which can only cam the vertebrae apart a short distance), nor too small (producing a flatter insert which requires greater force to cam into position). As shown in FIG. 4A, an appropriate degree of curvature of outwardly facing convex surfaces 28 and 30 occurs when they are dimensioned to represent an arc segment defined by identical angles A1 and A2 which are in the range of 15 to 40 degrees, and is most preferably about 20 degrees.